

Leiden University and Università' Campus Biomedico Roma are looking for a:

PhD Researcher on dynamic material flow analysis and probabilistic human and environmental risk assessment for the healthcare sector

Join an exciting Horizon Europe project called ENKORE, which will deliver a methodology to enable pharmaceutical companies to make safe and more sustainable healthcare products and packaging materials.

Key responsibilities

The healthcare sector of the future requires the inclusion of safety and sustainability in the design of new medical devices. The same reasoning applies to the packaging materials that will be used in the healthcare sector, without obviously compromising their required technical performance. As a PhD candidate in this project, you will have the opportunity to develop Dynamic Material Flow Analysis (DMFA) and Risk Assessment (RA) models to assess the safety of a sample of medical devices and packing materials used in the healthcare sector. These will be integrated into a comprehensive methodology to shape safe and more sustainable healthcare products and packaging materials.

More specifically, you will be working on:

- Mapping the distribution of incoming and outgoing materials in the value chains of the ENKORE project packaging materials and devices.
- Developing models to enable the understanding of the level of concern and exposure associated with the target packaging materials and devices of the ENKORE project.
- Identifying the main safety concerns (hotspots) for the ENKORE project packaging materials and devices that can be tackled to shape their re-design.
- Attending and actively participating in project meetings, providing updates on research progress and collaborating with partners.

What you bring

This position is a good fit for you if you recognise yourself in the following:

- You hold a master's degree in one these fields:
 - Industrial ecology, safety science, risk assessment, risk management, environmental sciences, or another related field.
- You have expertise in one or more of these areas:
 - (Dynamic) Material Flow Analysis.
 - (Probabilistic) Risk Assessment and Management.
- In case you do not have all the desired expertise, you demonstrate strong motivation to develop yourself in those areas.
- You have recorded experience in planning and executing research tasks.
- You have excellent social and communication skills and the ability to collaborate with other researchers, industry and policy actors.
- You have excellent English language skills in writing and speaking.

Where you will work

This PhD position will be a jointly supervised project at Leiden University and at Università' Campus Biomedico Roma. The student will conduct research at both institutions.

At Leiden University, your position will be embedded in the [Department of Industrial Ecology](#) of the [Institute of Environmental Sciences \(CML\)](#) (Faculty of Science) and the [Decision Engineering for Sustainability and Resilience \(DESIRE\) Laboratory](#) of [Leiden University College](#) (Faculty of Governance and Global Affairs).

The Institute of Environmental Sciences CML at the Faculty of Science

CML is a global leader in the field of sustainability assessment, especially Life Cycle Assessment, Material Flow Analysis and Environmental Input-Output Analysis. It offers a vibrant and supportive community of scientists committed to the challenges of sustainability, with a multidecade record of leading the field of industrial ecology in Life Cycle Assessment, Material Flow Analysis and Environmental Input-Output Analysis. CML distinguishes itself for its attention to professional development in coordination with the interests of its scientists. As such, there are plenty of opportunities to learn new skills, expand your knowledge, collaborate across disciplines, and experiment in a friendly environment fully embodying academic freedom across all career levels.

CML is part of the Faculty of Science, which is a world-class faculty where staff and students work together in a dynamic international environment. It is a faculty where personal and academic development are top priorities. Our people are committed to expand fundamental knowledge by curiosity and to look beyond the borders of their own discipline; their aim is to benefit science, and to make a contribution to addressing the major societal challenges of the future. The research carried out at the Faculty of Science is very diverse, ranging from mathematics, information science, astronomy, physics, chemistry and bio-pharmaceutical sciences to biology and environmental sciences. For more information about the Science Faculty, click [here](#).

The DESIRE laboratory at Leiden University College, Faculty of Governance and Global Affairs

The DESIRE Laboratory is a key player in the development of Decision Support Systems (DSS) with Multiple Criteria Decision Analysis/Aiding (MCDA). It (i) provides state-of-the-art, adaptable and transparent strategies to formulate, model and support better decision-making, (ii) develops and applies decision support tools to tackle sustainability and resilience-related challenges, and (iii) trains future decision engineers to tackle complex decision-making.

The DESIRE Laboratory is part of Leiden University College The Hague (LUC), the international English-language Honours College of Leiden University. Talented and motivated students from all over the world come to The Hague especially to take part in the innovative Liberal Arts and Science programme that focuses on today's global challenges. For more than a decade, LUC can count on a spot in the Keuzegids Universiteiten as the best-rated University College in the Netherlands. The academic staff, with diverse backgrounds and disciplines, have a passion for teaching and education in which the student is central. LUC is part of the Faculty of Governance and Global Affairs (FGGA), one of the seven faculties of Leiden University. This young, entrepreneurial, innovative organisation has three scientific institutes, two centres, over 3,700 students and 425 staff members. For more information about the FGGA Faculty, [click here](#).

At Università' Campus Biomedico Roma, your position will be embedded in the research team of Prof. Vincenzo Piemonte

<https://www.unicampus.it/en/people/prof-vincenzo-piemonte/>

PhD diploma

Possibility of being awarded the PhD degree from both institutions, i.e., Leiden University and Università' Campus Biomedico Roma.

Information

Enquiries can be made to Dr. Marco Cinelli (m.cinelli@luc.leidenuniv.nl), Dr. Stefano Cucurachi (s.cucurachi@cml.leidenuniv.nl), or Prof. Vincenzo Piemonte (V.Piemonte@unicampus.it).

Interested in this position?

Please send Dr. Marco Cinelli (m.cinelli@luc.leidenuniv.nl) the following documents:

- Curriculum Vitae.
- Motivation letter (max 2 pages).